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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,549	10/30/2003	Qi Deng	15436.249.38.1	7579

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WORKMAN NYDEGGER
(F/K/A WORKMAN NYDEGGER & SEELEY)
60 EAST SOUTH TEMPLE
1000 EAGLE GATE TOWER
SALT LAKE CITY, UT 84111

EXAMINER	
STAHL, MICHAEL J	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,549	DENG ET AL.	
	Examiner	Art Unit	
	Mike Stahl	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 17-33 is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☒ Claim(s) 2 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Objections

Claim 2 is objected to because it depends from itself. It appears that claim 2 should depend from claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Ushinsky (US 2003/0185519).

Claim 1: Ushinsky discloses an optical apparatus (fig. 2) comprising: a collimating device, including – a collimating portion (sleeve **21b** and its enclosed elements) that includes a collimating element **14b** optically coupled to an optical fiber **12b**, the collimating portion including a first engagement surface (inner half of ball joint **22**); a core portion (a "filter assembly" including sleeve **16a** and its enclosed elements, note [0027]); and an adapter portion (sleeve **21a**) that interconnects the collimating portion with the core portion, the adapter portion including a second engagement surface (outer half of ball joint **22**) that movably engages with the first engagement surface of the collimating portion to enable relative motion of the core portion with respect to the collimating portion.

Claim 2: The core portion contains an optical filter **15**.

Claim 3: The collimating portion, the core portion, and the adapter portion each cooperate to define a longitudinal cavity, and the collimating element **14b**, the fiber **12b**, and the optical component **15** are positioned in the longitudinal cavity.

Claim 4: The first and second engagement surfaces form articular surfaces that enable articular motion of the core portion with respect to the collimating portion (see e.g. fig. 4).

Claim 5: The relative motion of the core portion with respect to the collimating portion alters an optical path defined through the longitudinal cavity.

Claim 6: The relative motion of the core portion includes linear movement along a longitudinally axial direction and articular movement about three orthogonal axes ([0028] lns. 6-11; [0043] lns. 8-12).

Claim 7: The first engagement surface is convexly shaped, and the second engagement surface is concavely shaped.

Claim 8: The collimating portion, the core portion, and the adapter portion are bonded to one another after relative motion of the core portion with respect to the collimating portion is performed ([0043] lns. 13-14; claims 6-14).

Claim 9: In the alternate embodiment of fig. 5A, the core portion (generally at **50**) comprises a portion of the first collimating device (generally at **51b**) and a second collimating device (generally at **51a**).

Claims 10-11: The Ushinsky fig. 2 device described above meets the limitations of these claims.

Claims 1-6 and 10-13 are rejected under 35 U.S.C. 102(a) as being anticipated by Bergmann et al. (US 6430337).

Claim 1: Bergmann discloses an optical apparatus (fig. 10) comprising: a collimating device, including – a collimating portion (interpreted here as the entire assembly left of the bold line denoting ball joint **542** in fig. 10) that includes a collimating element **402** optically coupled to an optical fiber **400a**, the collimating portion including a first engagement surface **578**; a core portion (including the section of housing **524** which has hatch lines going from lower left to upper right); and an adapter portion (regarded as the sleeve section directly to the right of line **542**, having the shading / hatch lines going from upper left to lower right in fig. 10) that interconnects the collimating portion with the core portion, the adapter portion including a second engagement surface **576** that movably engages with the first engagement surface of the collimating portion to enable relative motion of the core portion with respect to the collimating portion.

Claim 2: The core portion contains an optical filter **408**.

Claim 3: The collimating portion, the core portion, and the adapter portion each cooperate to define a longitudinal cavity, and the collimating element, the fiber, and the optical component are positioned in the longitudinal cavity.

Claim 4: The first and second engagement surfaces form articular surfaces that enable articular motion of the core portion with respect to the collimating portion.

Claim 5: The relative motion of the core portion with respect to the collimating portion alters an optical path defined through the longitudinal cavity.

Claim 6: The relative motion of the core portion includes linear movement along a longitudinally axial direction and articular movement about three orthogonal axes. The linear movement is described with respect to parts **430** and **433** of fig. 6 at col. 7 lns. 11-21. It is considered inherent that the core portion and adapter portion, as interpreted above in relation to claim 1, exhibit the same type of relative motion.

Claim 10: Bergmann discloses a collimating device (fig. 10) comprising: a collimating portion (interpreted here as the entire assembly left of the bold line denoting ball joint **542** in fig. 10) that defines a first longitudinal cavity segment extending between first and second ends, the first longitudinal cavity segment containing an optical fiber **400a** that is optically coupled to a collimating lens **402**, wherein the collimating portion first end has a shaped first engagement surface **578**; a core portion (including the section of housing **524** which has hatch lines going from lower left to upper right) that defines a second longitudinal cavity segment extending between first and second ends, the second longitudinal cavity segment containing an optical component **408**; and an adapter portion (regarded as the sleeve section directly to the right of line **542**, having the shading / hatch lines going from upper left to lower right in fig. 10), the adapter portion defining a third longitudinal cavity segment extending between first and second ends and which interconnects the collimating portion with the core portion, wherein the adapter portion second end has a shaped second engagement surface **576** that movably engages with the first engagement surface **578** of the collimating portion to enable relative movement between the collimating portion and the core portion before the collimating portion is bonded to the adapter portion.

Claim 11: The adapter portion is configured to enable the core portion to engage in linear axial movement in a longitudinal direction and articular movement about three orthogonal axes with respect to the collimating portion. The linear movement is described with respect to parts **430** and **433** of fig. 6 at col. 7 lns. 11-21. It is considered inherent that the core portion and adapter portion, as interpreted above in relation to claim 10, exhibit the same type of relative motion prior to bonding.

Claim 12: The core portion second end has a reduced diameter (analogous to surface **431** in fig. 6) and is slidably engaged with the adapter portion first end to enable the linear axial movement.

Claim 13: The collimating portion is bonded to the adapter portion between the first and second engagement surfaces after relative movement is performed, and the reduced diameter core portion second end is bonded to the adapter portion first end after relative movement is performed (col. 7 lns. 61-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergmann et al. (cited above).

Claims 7, 14 and 16: The first engagement surface **578** is annular but concavely shaped, and the second engagement surface **576** is annular but convexly shaped. These shapes are opposite to what claims 7, 14 and 16 specify. However, whether the first or second surface is concave or convex is not a critical aspect of the Bergmann device. The surfaces need only be nestable. Thus a person skilled in the art at the time the invention was made would have considered it an obvious variant to have reversed the curvature of the respective first and second surfaces of the ball joint in Bergmann, since such reversal would not alter the functionality of the ball joint.

Claim 8: The collimating portion, the core portion, and the adapter portion are bonded to one another after relative motion of the core portion with respect to the collimating portion is performed.

Claim 15: It is considered inherent that the gaps between the first and second engagement surfaces and between the reduced diameter core portion second end and the adapter portion first end are minimized, at least since the ball joint surfaces are nested and since the comparable parts **430** and **433** (fig. 6) are described as having a slip fit.

Allowable Subject Matter

Claims 17-33 are allowed.

Independent claims 17 and 23 call for a tongue / slot interface between a core portion and an adapter portion. This type of interface is not taught or suggested by the Ushinsky or Bergmann et al. references applied above. The closest reference of which the examiner is aware is Poorman (US 4730891), which discloses a tongue / slot interface between opposed collimator assemblies. However, the Poorman reference fails to meet the other requirements of claims 17 and 23. Accordingly none of the prior art of record teaches or suggests a collimating device having all the limitations of claims 17 and 23. Claims 18-22 and 24-28 depend from claims 17 and 23 respectively.

Independent claim 29 recites that the engagement surfaces include an increased diameter annular portion at the first end of the collimating portion, and an annular lip extending radially inward at the second end of the adapter portion. The Ushinsky and Bergmann et al. references merely disclose ball joints, and do not teach or suggest the recited type of engagement surfaces. It is noted that Ushinsky goes into some detail about the advantages of the disclosed ball joint, so it is not considered obvious to modify that structure to comply with claim 29. Nicia et al. (US 4265511) discloses an engagement structure similar to what claim 29 requires, but the connector is intended to be detachable (not bonded) and the relative movement between the collimating portion and the core portion is not enabled by the engagement surfaces but rather is controlled by adjustment screws **49a/b**. Therefore the prior art of record does not disclose or suggest a collimating device which meets all the limitations of claim 29. Claims 30-33 depend from claim 29.

Conclusion

The additional references cited on the attached PTO-892 form are considered relevant to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Stahl at 571-272-2360. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official communications which are eligible for submission by facsimile and which pertain to this application may be faxed to 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJS

Mike Stahl
Patent Examiner
Art Unit 2874

April 24, 2005

Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800